



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

PR

SK

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/107,141 06/30/98 BEERS

K 016499-546

021839 PM82/0829
BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA VA 22313-1404

EXAMINER

ELDRED, J

ART UNIT	PAPER NUMBER
----------	--------------

3644

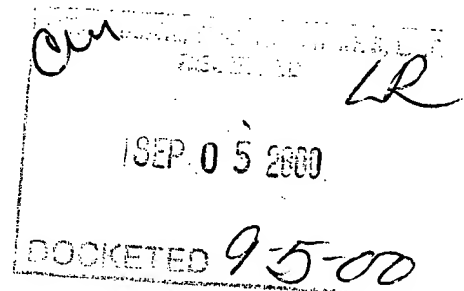
21

DATE MAILED: 08/29/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

016499-546
Liquid Air
EJG/RDP



Final Response Due
11/29/00

Office Action Summary

Application No.

09/107,141

Applicant(s)

Beers et al

Examiner

Woodrow Eldred

Group Art Unit

3644

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 6-13-00.
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-30 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-30 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of References Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

Art Unit: 3644

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 11, 13, 14, 16, 17, 22, 24, 25, 29, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Edwards et al.

See column 7, lines 30-44, which disclose that the permeator may comprise hollow fibers with different physical characteristics to produce different purities level outputs. See especially column 10, line 61-column 12, line 18, and Figure 13 which disclose a system for inerting an aircraft fuel tank with two different membrane modules to produce two nitrogen-enriched air streams for use during different flight conditions.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 5-10, 12, 15, 16, 18, 19-21, 23 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards et al in view of Dornheim.

Edwards et al disclose a system and method for inerting an aircraft fuel tank which comprises contacting a with a first membrane module with compressed air to produce a first nitrogen-enriched air stream which is introduced into the fuel tank during periods of low demand for nitrogen-enriched air and contacting a second membrane module with compressed air to

Art Unit: 3644

produce a second nitrogen-enriched air stream which is introduced into the fuel tank during periods of high demand for nitrogen-enriched air, and in which the first membrane module has a lower O₂ permeance and a higher O₂/N₂ selectivity than the second membrane modules. See especially column 10, line 61-column 12, line 18, and Figure 13. Edwards et al fail to disclose the specific parameters of flow rates or establishing conditions to liberate a portion of O₂ dissolved in the fuel. Dornheim teaches, see the third paragraph from the end, that in a fuel tank inerting system conditions are created in which "oxygen enrichment occurs from the dissolved air in the fuel." To substitute particular parameters and conditions in the fuel inerting system of Edwards et al in place of unspecified conditions are considered to have been a matter of design and engineering choice in order to achieve the desired performance of the system in a particular situation. To have the claimed flow rates and oxygen liberation is considered, without any indication of unexpected results, to have been obvious to one having ordinary skill in the art.

5. Applicants' arguments, filed 6-13-00, have been carefully considered but not considered persuasive in view of the cited art. Applicants' main argument consists of the assertion that Edwards et al "does not disclose or suggest ... the use of membranes with different separation characteristics within the same permeator." As noted in the rejection above, Edwards et al specifically states that such membranes with different characteristics can be used in the same permeator and goes on to illustrate the use of their permeator in an aircraft fuel tank inert gas supply system.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 3644

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Woodrow Eldred whose telephone number is (703) 306-4151.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-4177.



**J. WOODROW ELDRED
PRIMARY EXAMINER
GROUP 220**